

ABSTRACT

This invention is directed to compositions and methods for producing a medical device coated with a matrix and an antibody which reacts with an endothelial cell antigen. The matrix coating the medical device may be composed of synthetic material, such as polyurethane, poly-L-lactic acid, cellulose ester or polyethylene glycol. In another embodiment, the matrix is composed of naturally occurring materials, such as collagen, fibrin, elastin, amorphous carbon. In a third embodiment, the matrix may be composed of fullerenes. The fullerenes range from about C60 to about C100. The medical device may be a stent or a synthetic graft. The antibodies promote adherence of endothelial cells on the medical device. The antibodies may be mixed with the matrix or covalently tethered through a linker molecule to the matrix. Following adherence to the medical device, the endothelial cells differentiate and proliferate on the medical device. The antibodies may be different types of monoclonal antibodies. Methods of preparing such composition and methods of treating a mammal with atherosclerosis or other types of vessel obstruction are disclosed. By facilitating adherence of endothelial cells to the surface of the medical device, the methods and compositions of this invention will decrease the incidence of restenosis as well as other thromboembolic complications resulting from implantation of medical devices.